

225 West Santa Clara Street, Suite 1200  
San Jose CA 95113-1723

Tel. 408.292.5800

Fax 408.287.8040

www.thelenreid.com

## F A X C O V E R P A G E

TO: Magdalen Greenlief

FAX: 571-273-0125

DATE: October 25, 2007

PHONE:

FROM: Suvashis Bhattacharya

FAX: 408.287.8040

TOTAL PAGES: 9

(including cover  
page)

PHONE: 408.282.1861

E-MAIL: sbhattacharya@thelen.com

### Certificate of Transmission under 37 CFR 1.8

I hereby certify that this correspondence is being facsimile transmitted with the United States Patent and Trademark  
Office to OIPE, P.O. Box 1450 Alexandria, VA 22313-1450  
on the date printed below:

Date:

10/25/07

Signature:

Michelle R. Crosby

Re: Serial No.: 10/578,604  
Docket No.: SHOE-0003 (037498-004)

Please see attached:

1. Request for Participation in Patent Prosecution Highway Pilot Program (2 pp)
2. Fee Transmittal – Fee to be taken from deposit account
3. Translation of JP3984631 claims (4 pp)
4. Executed Certificate by Sonobe

Thank you,

Michelle R. Crosby For Suvashis Bhattacharya, Esq.

In case of a problem with this transmission, please call the Fax Operator at 408.282.1831

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PTO/SB/20 (09-07)

Approved for use through 12/31/2008. OMB 0551-0058

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**REQUEST FOR PARTICIPATION IN THE PATENT PROSECUTION HIGHWAY (PPH) PILOT PROGRAM BETWEEN THE (1) JPO OR (2) UKIPO, AND THE USPTO**

Application No.:	10/578,604	First Named Inventor:	Takeo SONOBE
Filing Date:	May 4, 2006	Attorney Docket No.:	SHOB-0003 (037498-004)
Title of the Invention:	Electrical Power System Suppressing Corona Discharge from Viewpoint of Environment		

THIS REQUEST FOR PARTICIPATION IN THE PPH PILOT PROGRAM MUST BE FAXED TO:  
THE OFFICE OF THE COMMISSIONER FOR PATENTS AT 571-273-0125 DIRECTED TO THE ATTENTION OF MAGDALEN GREENLIEF

APPLICANT HEREBY REQUESTS PARTICIPATION IN THE PATENT PROSECUTION HIGHWAY (PPH) PILOT PROGRAM AND PETITIONS TO MAKE THE ABOVE-IDENTIFIED APPLICATION SPECIAL UNDER THE PPH PILOT PROGRAM.

The above-identified application validly claims priority under 35 U.S.C. 119(a) and 37 CFR 1.55 to one or more corresponding JPO application(s) or UKIPO application(s).

The ☒ JPO ☐ UKIPO application number(s) is/are: 2005-515185

The filing date of the ☒ JPO ☐ UKIPO application(s) is/are: October 29, 2004

**I. List of Required Documents:**

- a. A copy of all JPO office actions (excluding "Decision to Grant a Patent") in the above-identified JPO application(s), or a copy of all UKIPO office actions in the above-identified UKIPO application(s).
- ☐ Is attached.
- ☒ Is available via Dossier Access System. Applicant hereby requests that the USPTO obtain these documents via the Dossier Access System.
- \*It is not necessary to submit a copy of the "Decision to Grant a Patent" and an English translation thereof.
- b. A copy of all claims which were determined to be patentable by the JPO in the above-identified JPO application(s), or a copy of all claims which were determined to be patentable by the UKIPO in the above-identified UKIPO application(s).
- ☐ Is attached.
- ☒ Is available via Dossier Access System. Applicant hereby requests that the USPTO obtain these documents via the Dossier Access System.
- c. English translations (where applicable) of the documents in a. and b. above along with a statement that the English translations are accurate are attached.

Information disclosure statement listing the documents cited in the JPO office actions or UKIPO office actions is attached.

Copies of all documents are attached except for U.S. patents or U.S. patent application publications.

[Page 1 of 2]

This collection of information is required by 35 U.S.C. 119, 37 CFR 1.55, and 37 CFR 1.102(d). The information is required to obtain or retain a benefit by the public, which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. FAX COMPLETED FORMS TO: Office of the Commissioner for Patents at 571-273-0125, Attention: Magdalen Greenlief.

PTO/SB/20 (09-07)

Approved for use through 12/31/2008. OMB 0651-0058

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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# REQUEST FOR PARTICIPATION IN THE PATENT PROSECUTION HIGHWAY (PPH) PILOT PROGRAM BETWEEN THE (1) JPO OR (2) UKIPO, AND THE USPTO (continued)

Application No.: 10/578,604 First Named Inventor: Takeo SONOBE

## II. Claims Correspondence Table:

Claims in US Application	Patentable Claims in JP/UKIPO Application	Explanation regarding the correspondence
1	1	US claim 1 is divided to Jp claim 1 and 3.
12	2	
	3	
13	4	
14	5	
15	6	US claim 18 and <del>18</del> <sup>19</sup> are combined to Jp claim 9.
16	7	
17	8	
18	9	
19	9	
20 + 2	10	US claim is restricted on Japanese on claim 10.
21	—	

III. All the claims in the US application sufficiently correspond to the patentable/allowable claims in the JPO or UKIPO application.

## IV. Payment of Fees:

The Commissioner is hereby authorized to charge the petition fee under 37 CFR 1.17(h) as required by 37 CFR 1.102(d) to ☒ Deposit Account No. See Attached

☐ Credit Card. Credit Card Payment Form (PTO-2038) is attached.

Signature <u>T. Sonobe</u>	Date <u>Oct. 14, 2007</u>
Name (Print/Typed) <u>Takeo SONOBE</u>	Registration Number

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Effective on 12/08/2004.

Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

**FEE TRANSMITTAL  
for FY 2007**☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$ ) 130.00

Complete if Known

Application Number	10/578,604
Filing Date	05/04/2006
First Named Inventor	Sonobe, Takeo
Examiner Name	Unassigned
Art Unit	Unassigned
Attorney Docket No.	SHOE-0003 (037498-004)

**METHOD OF PAYMENT (check all that apply)**

☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify) : \_\_\_\_\_  
☒ Deposit Account Deposit Account Number: 50-1698 Deposit Account Name: : THELEN REID BROWN RAYSMAN & STEINER LLP

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, except for the filing fee  
☒ Charge any additional fee(s) or underpayments of fee(s) ☒ Credit any overpayments  
Under 37 CFR 1.16 and 1.17

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

**FEE CALCULATION****1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee(\$)	Fee(\$)	Small Entity Fee(\$)	Fee(\$)	Small Entity Fee(\$)	
Utility	310	155	510	255	210	105	\$
Design	210	105	100	50	130	65	
Plant	210	105	310	155	160	80	
Reissue	310	155	510	255	620	310	
Provisional	210	105	0	0	0	0	

**2. EXCESS CLAIM FEES**

Fee Description	Small Entity Fee (\$)	Fee (\$)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	210	105
Multiple dependent claims	370	185

**Total Claims**      **Extra Claims**      **Fee(\$)**      **Fee Paid (\$)**

\_\_\_\_\_ -20 or HP= \_\_\_\_\_ x 50.00 = \_\_\_\_\_

HP = highest number of total claims paid for, if greater than 20.

**Indep. Claims**      **Extra Claims**      **Fee(\$)**      **Fee Paid (\$)**

\_\_\_\_\_ - 3 or HP= \_\_\_\_\_ x 210.00 = \_\_\_\_\_

HP = highest number of independent claims paid for, if greater than 3.

**3. APPLICATION SIZE FEE**

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(g).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
_____	_____	_____ / 50 = _____ (round up to a whole number) x _____ = _____		

**4. OTHER FEE(S)**

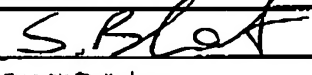
Non-English Specification, \$130 fee (no small entity discount)

Other (e.g., late filing surcharge): Patent Prosecution Highway

Fees Paid (\$)

130.00

**SUBMITTED BY**

Signature		Registration No. (Attorney/Agent)	48,554	Telephone	408-292-5800
Name (Print/Type)	Suvashis Bhattacharya	Date	10/25/07		

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing this form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

**CERTIFICATE**

I, Takeo SONOBE,  
of Shobayashi International Patent Office  
do solemnly and sincerely declare that I am conversant with the English and Japanese  
languages and am a competent translator thereof, and that the attached document is, to  
the best of my knowledge and belief, a true and correct translation of the allowed claims  
of the Japanese Patent No. 3984631 filed on October 29, 2004 in the name of  
**ELECTRICAL POWER SYSTEM SUPPRESSING CORONA DISCHARGE FROM  
VIEWPOINT OF ENVIRONMENT.**

T. Sonobe  
Takeo SONOBE

Oct. 14. 2007  
Date

ATF-005US

Translation of JP3984631 LISTING OF CLAIMS

## 1. An electric power system comprising:

a weather data input means for inputting weather data, temperature, atmospheric pressure and weather, at predetermined time intervals, in the district of an operating transmission line;

a digital processing unit;

a memory means for storing said transmission line data that shows relations between a corona discharge start voltage and weather conditions at each transmission line, and processed data by said digital processing unit; and

a power system analysis means, wherein said digital processing unit calculates the corona discharge start voltage at said transmission line by the data on weather forecasts and said transmission line data,

if the calculated corona discharge start voltage is lower than a normal transmission voltage of the line, a countermeasure transmission voltage that is recorded in said memory means in advance is selected to set a transmission voltage of the transmission line, and

if the calculated corona discharge start voltage is above the normal transmission voltage of the line, the normal transmission voltage is selected as the set transmission voltage of the transmission line, and

wherein said power system analysis means analyzes loads of apparatuses of the power system.

## 2. The electric power system as claimed in claim 1,

wherein the calculation of the corona discharge start voltage by said digital processing unit is executed as follows:

(1) the transmission line is an object for which a corona discharge is to be suppressed,

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## ATF-005US

(2) said digital processing unit reads data to determine whether past data should be used or not, and if the past data should be used, the past data recorded in said memory means is used for the corona discharge start voltage, and

(3) if the past data cannot be used, the corona discharge start voltage at the transmission line is calculated by substituting the weather forecast data and the transmission data in an equation.

3. The electric power system as claimed in claim 1 or 2,  
if the calculated corona discharge start voltage is lower than a normal transmission voltage of the line,

stopping transmitting electric power on the transmission line.

4. The electric power system comprising:

a corona discharge detection means;

a digital processing unit;

a memory means for storing transmission line data and processed data by said digital processing unit;

a power system analysis means;

a weather detecting means; and

a transmitter,

wherein said digital processing unit stops a corona discharge in a short time by lowering a transmission voltage of a transmission line that generates the corona discharge, or stops transmitting electric power in the transmission line when said corona discharge detection means detects a corona discharge, and

wherein said power system analysis means adjusts loads of apparatuses in the electric power system.

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5. The electric power system as claimed in claim 4,  
wherein said digital processing unit stores weather conditions in said memory means  
before and after occurrence of a corona discharge, and  
changes the transmission voltage to a previous one, when weather conditions are  
assumed not to generate a corona discharge.

6. The electric power system as claimed in claim 4 or 5,  
wherein said corona discharge detection means is an ultraviolet light detecting  
device.

7. The electric power system as claimed in claim 6  
wherein said corona discharge detection means is an ultraviolet light detecting device  
that detects ultraviolet light of a wavelength 100 nm to 320 nm.

8. The electric power system as claimed in claim 4,  
wherein said digital processing unit restores the previous transmission voltage on a  
predetermined time after lowering the transmission voltages.

9. An electric power system operating method comprising:  
inputting weather data, temperature, atmospheric pressure and weather at  
predetermined time intervals;

calculating a corona discharge start voltage at a transmission line and deciding a set  
transmission voltage of the transmission line by a digital processing unit;

wherein the calculating the corona discharge start voltage includes:

judging whether or not the transmission line is an object for which a corona  
discharge is to be suppressed,

deciding whether past data should be used or not, and if the past data should be used,

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the past data recorded in said memory means is used for the corona discharge start voltage, calculating the corona discharge start voltage at the transmission line by substituting weather forecast data and the transmission data in an equation, if the past data cannot be used. storing transmission line data and processed data in memory means by a digital processing unit; and analyzing loads of apparatuses of the power system by a power system analysis means.

10. An electric power system operating method comprising:
  - detecting a corona discharge on a transmission line;
  - converting the information that the corona discharge occurred to the information that a power system analysis means is able to analysis;
  - sending the converted information to said power system analysis means;
  - stopping the corona discharge in a short time by lowering a transmission voltage of a transmission line that generates the corona discharge, or stopping transmitting electric power in the transmission line;
  - adjusting loads of apparatuses in the electric power system; and
  - operating the apparatuses under an adjusted condition for supplying electric power.

ATF-005

**Disclaimer:**

This English translation is produced by machine translation and may contain errors. The JPO, the INPIT, and those who drafted this document in the original language are not responsible for the result of the translation.

**Notes:**

1. Untranslatable words are replaced with asterisks (\*\*\*\*).
2. Texts in the figures are not translated and shown as it is.

Translated: 20:33:27 JST 10/31/2007

Dictionary: Last updated 10/12/2007 / Priority:

## Decision to Grant a Patent

Application number: Application for patent 2005-515185

Date of Drafting: Heisei 19(2007) June 26

Patent examiner: YAJIMA, Shinichi 9060 5T00

Title of invention: Electric power system system which deters generating of corona discharge from an environmental viewpoint

The number of claims: 10

Applicant: Sonobe Takeo

Representative: SHOBAYASHI, Masayuki

This application is to be granted a patent as there is no reason for refusal.

Director General(p.p.) Director(p.p.) Examiner Assistant examiner Manager for Determination  
of Classification HIROSE, Fumio YAJIMA, Shinichi YAJIMA, Shinichi 8526 9060 9060

1. Distinction of Patent: Usually

2. Reference documents: \*\*

3. Application of Patent Law, Section 30: Nothing

4. Change of Title of Invention: Nothing

5. International Patent Classification (IPC)

H02J 3/00 K, H02J 3/00 Z

6. Deposition of Microorganism

7. Display of Purport that Retroactivity of Filing Date is not Accepted

## Decision to Grant a Patent(Memorandum)

Application number: Application for patent 2005-515185

### 1. Technical Fields to Be Searched (IPC, DB Name)

H02J 3/00

### 2. Reference patent documents

United States patent 5986276th (US, A) JP,2001-157363,A (JP, A) JP,06-012929,B (JP, B-2)  
JP,2004-127857,A (JP, A)

### 3. Reference books and magazines

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[Translation done.]